

Education & Public Outreach

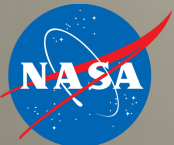
Lars Perkins

Chairman

Education and Public Outreach Committee

NASA Advisory Council

26 July 2012



Topics

- Who we are
- What we've done
- What we want to do





Richard Garriott



Dwayne McCay



Michael Bostick



Peter Shankman



Iannis Miaoulis



Erika Vick



Scott Parazynski



Doug King

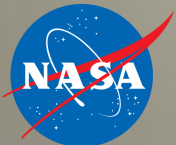


Lars Perkins



Stephen Pearse

WHO
ARE WE?



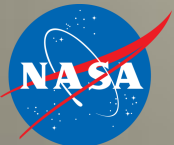
Two New Members



Pilar Montoya is the Chief Executive Office (CEO) of the Society of Hispanic Professional Engineers (SHPE), the premier national organization aimed at increasing the number of Hispanics contributing to the nation's innovation and technology future. SHPE aims to motivate Hispanics to study and pursue careers in Science, Technology, Engineering and Math.

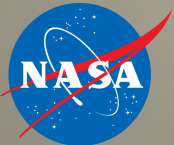


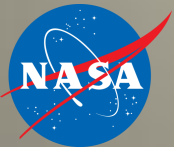
Matthew Chamberlin is a social media marketer, experienced video producer, blogger and speaker at industry conferences, keynotes and corporate events.

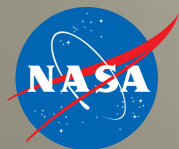


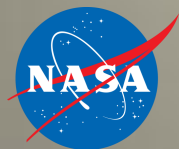
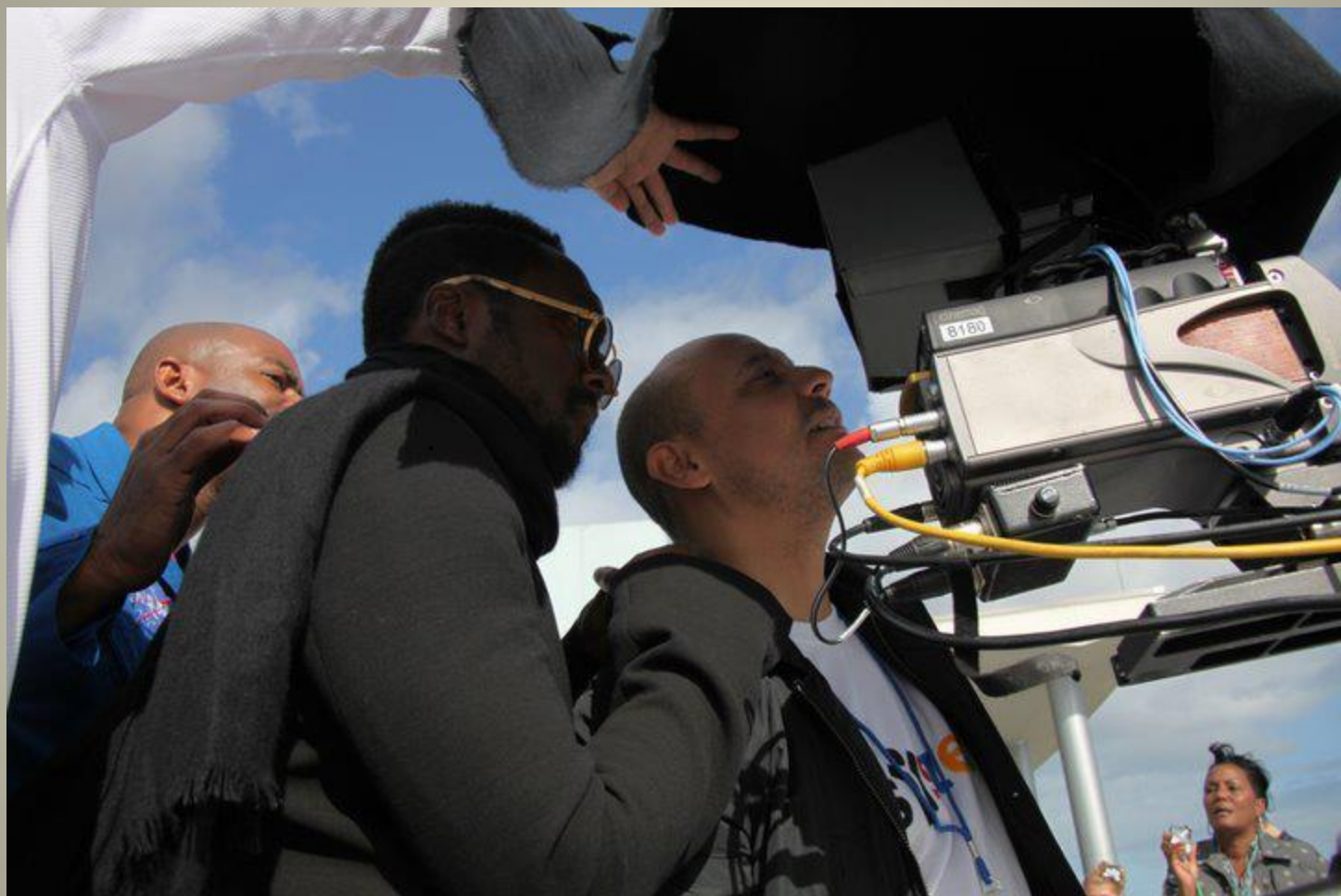
What Have We Done?

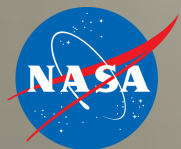
- July 24: Goddard meeting
 - Lars Perkins
 - Steve Pearse
 - Pilar Montoya
 - Matthew Chamberlin
 - Michael Bostick

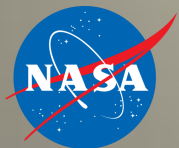


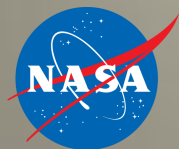




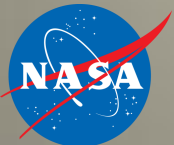




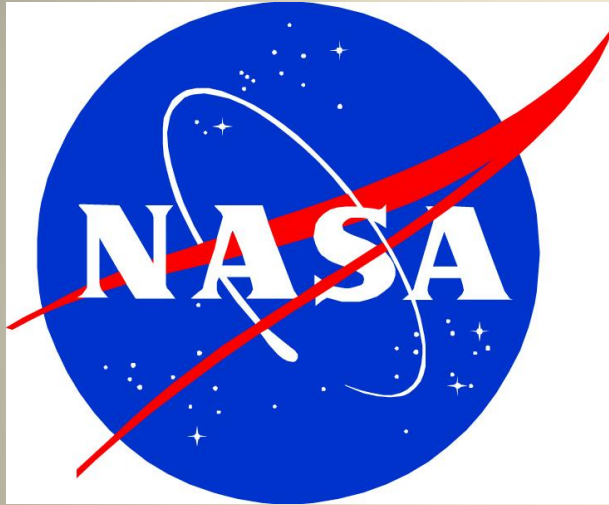




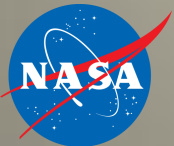
The Taxi Driver Problem



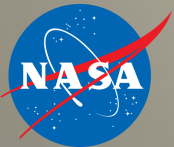
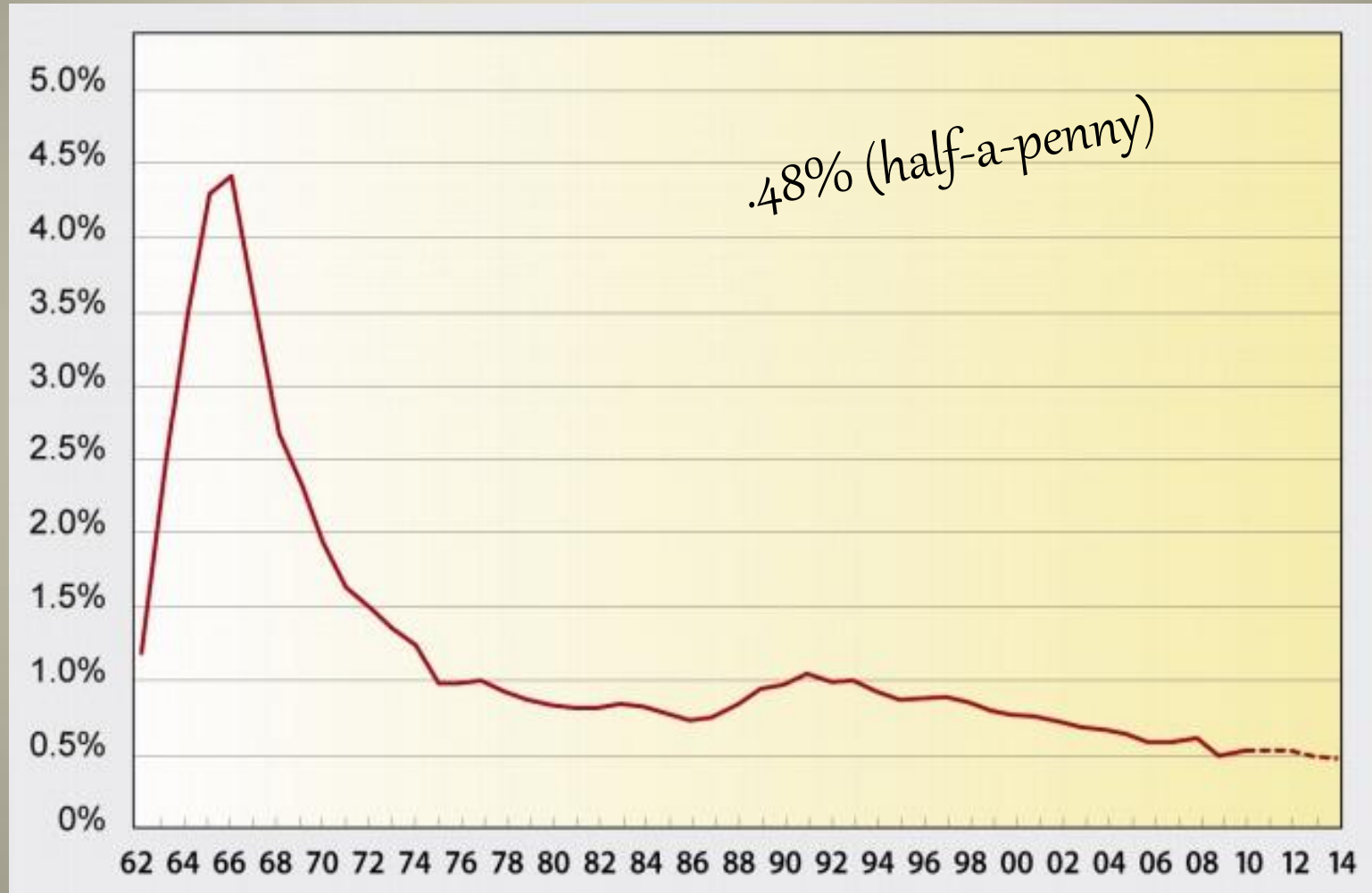
This equation is false



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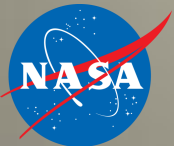
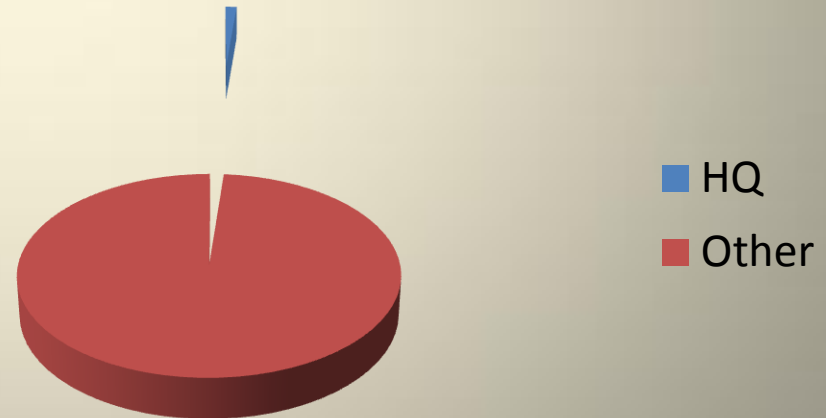
Budget



Budget

- EDUCATION (Leland Melvin)
 - \$137 → \$107 mm (~ \$73mm in directed programs)
- PUBLIC OUTREACH (David Weaver)
 - \$5.8 mm

Public Outreach Spending



Herding Cats



Office of Communications

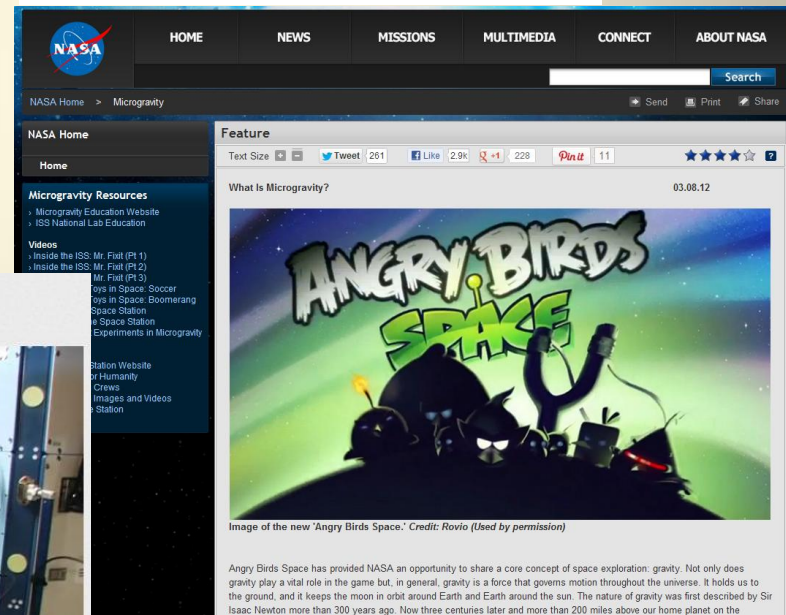
Angry Birds Space

Initiative started with a simple tweet in 2011

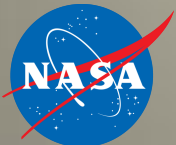


Agreement included major Education element with ISS video from astronaut Don Pettit

- The video has more than 18 million views
- Education website has been visited more than 2 million times



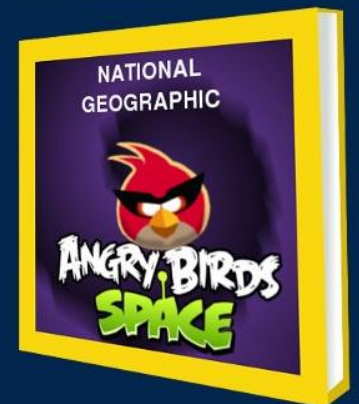
Angry Birds Space: NASA announcement



Office of Communications

Angry Birds Space

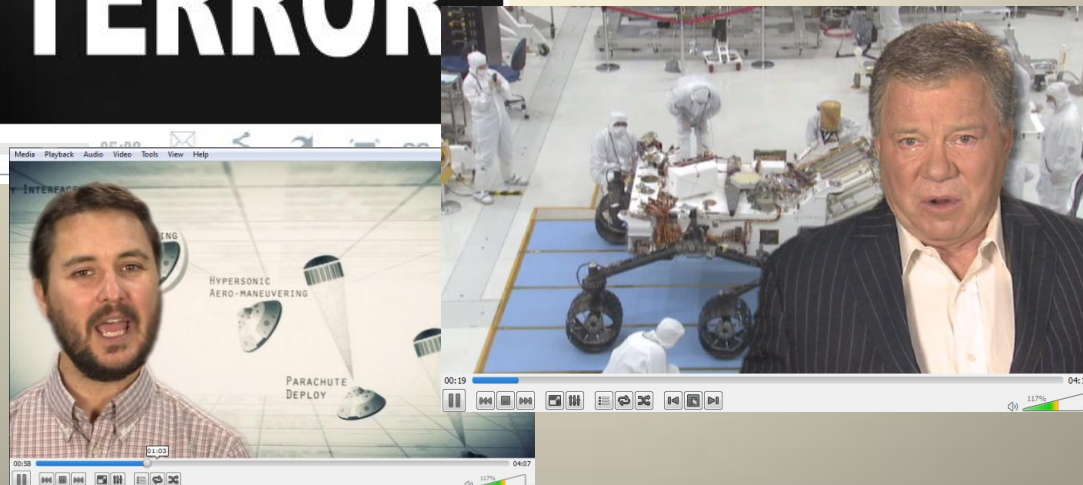
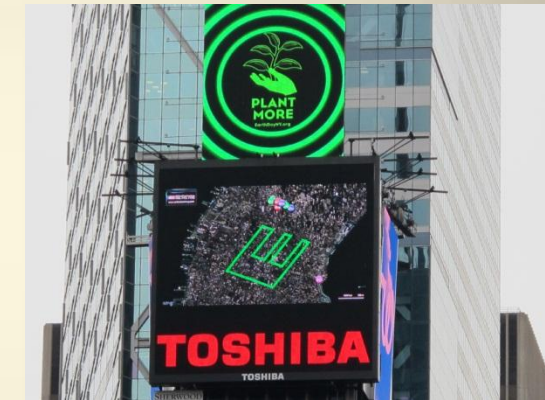
- Downloaded more than 20 million times in 10 days
- Most popular game in history
- NASA collaboration includes National Geographic book about space



Office of Communications

Curiosity Video Productions

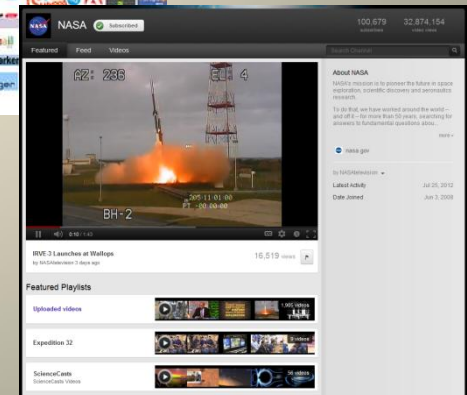
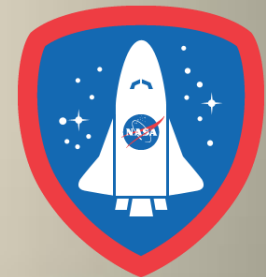
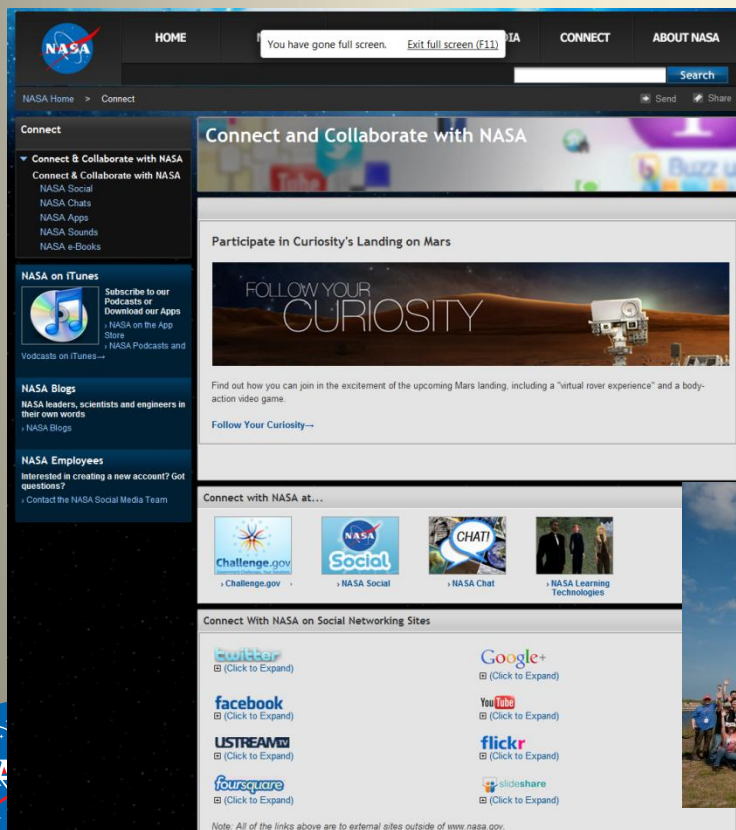
- 7 Minutes of Terror Video
 - More than 700 thousand views
 - Gone viral and featured on major television networks and The New York Times
- “Grand Entrance: videos hosted by William Shatner and Wil Wheaton
- Secured full NASA TV landing coverage on Toshiba’s Times Square video screen in New York



Office of Communications

Social Media

- Recognized as best social media in Federal Government
- @NASA has 2.6 million followers and honored with 2012 Shorty Award
 - NASA has more than 350 social media accounts <http://www.nasa.gov/connect>
- NASA Socials (formerly known as Tweetups) provide followers with the opportunity to go behind-the-scenes at NASA facilities and events.
 - Has hosted 36 to date with another 10 scheduled, including the first multi-center Social for Curiosity's landing
 - Wikipedia entry http://en.wikipedia.org/wiki/NASA_Social



Note: All of the links above are to external sites outside of www.nasa.gov.

ECC Success

- Finding

- The Office of Education should be recognized for its initiative in creating the Education Coordinating Committee, and for its success in driving closer collaboration between Centers' education activities. As an example, we applaud the planned multi-center Curiosity @NASASocial event . In the future, we strongly encourage NASA senior management to support the ECC's oversight role.

NASA UNVEILS SOCIAL MEDIA EVENT FOR MARS LANDING

NASA Hosts First Multi-Center Social Media Event for Mars Landing

08.03.12

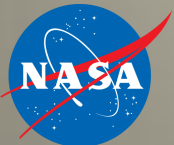
NASA will host its first-ever multi-center NASA Social on Aug. 3 to preview the landing of the [Mars Science Laboratory's Curiosity rover](#) on Aug. 6 EDT (Aug. 5 PDT).

Events will be held simultaneously at six NASA field centers, including [Ames Research Center](#) in Moffett Field, Calif.; [Glenn Research Center](#) in Cleveland; [Goddard Space Flight Center](#) in Greenbelt, Md.; [Johnson Space Center](#), Houston; and, [Langley Research Center](#) in Hampton, Va. Each center will be connected via a multi-center NASA Television simulcast with the [Jet Propulsion Laboratory](#) during its NASA Social, which was previously [announced](#). JPL is the lead NASA center for Mars Science Laboratory's two-year mission.

accounts under the umbrella of NASA, their social media presence is one of the best on the Web.

The NASA Mars Science Lab Social Media Event

Well, it looks like NASA is back at it again. In conjunction with the [landing of NASA's Mars rover Curiosity](#) they are holding a multi-location social media event. The so



Elevation of CCC

- Recommendation

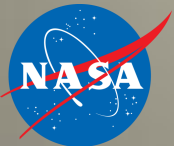
- Building on the success of the ECC, the Communications Coordinating Committee (CCC) should be elevated to a Council, moving it from a coordination role to strategic and decisional function.

- Reason

- The ECC has been successful in bringing together Center education resources to coordinate their activities and present a higher profile, integrated presence to the public. A similar opportunity exists now for communications.

- Consequences of No Action

- Duplicative messaging to public, lack of message coordination, less “wood” behind more “arrows”, leading to public confusion.



Goddard Visit

- Michelle Thaller



Social Media - NASA Portal

Twitter:

@NASA Impressions (Tweets/Retweets seen by)	28,579,769
@NASA Unique Accounts Retweeting Us	20,182
@NASA Inbound Messages (tweets sent to us)	31,475
@NASA Outbound Messages (tweets sent out)	205
@NASA Mentions	7,277
@NASA New Followers	20,066

According to hashttracking.com pulled on June 6 at 3:45am ET for the previous 24 hours

#VenusTransit Tweets (sent out containing hashtag)	16,541,065
#VenusTransit Impressions (Tweets/Retweets seen by)	74,900,101

Facebook:

Total number of direct post impressions on news feed of NASA's posts	2,509,963
Total number of post impressions from shares to other walls/friends news feeds	7,823,757
Total number of page impressions	518,016
Total number of unique fans interacting with page/posts	531,721
Total number of mentions of NASA on Facebook	111,036



<http://venustransit.nasa.gov>



NASA Watch

This is not a NASA Website. You might learn something. It's YOUR space agency. Get involved. Take it to the next level. nasawatch@spaceref.com | Voice +1.703.787.6567 | [RSS Feed](#) | [Twitter](#) | [Advertising](#) | [Archives](#)

NASA Says It Cannot Advertise - and Then Buys Advertisements

By [Keith Cowing](#) on August 25, 2011 2:53 PM [No Comments](#)

[NASA GSFC Solicitation: Know Your Earth Message Displays](#)

"NASA/GSFC has a requirement for messaging displays to be posted in [Chicago](#) during the months of November and December, in support of the Know Your Earth 2.0, Chicago (KYE II) project. These include city wallscapes, shopping mall kiosk displays, rail transit posters, and airport dioramas. NASA/GSFC intends to purchase the items from Clear Channel Outdoor pursuant to FAR 13.106, for the acquisition of supplies or services determined to be reasonably available from only one source. The KYE II project is a joint venture between NASA's Earth-Observing missions and Clear Channel Outdoor. Each NASA Earth-Observing Mission involved has written the KYE project into their Education/Public Outreach Implementation Plans."

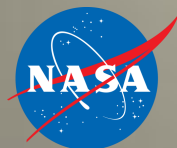
✦ Keith's note: I have lost count how many times people at NASA have told me that they cannot self-promote, advertise, lobby, or otherwise try to use standard marketing tools to inform the public of the things that they do. They always cite dire Congressional prohibitions against such activities. Then they go off and totally violate these prohibitions with advertising procurements such as this one. I am not certain that they actually know what it is they are allowed or not allowed to do and just throw this answer out when they do not want to do something.



[Advertising Allowed or Prohibited?](#), earlier post

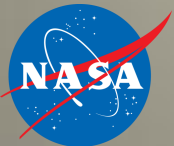
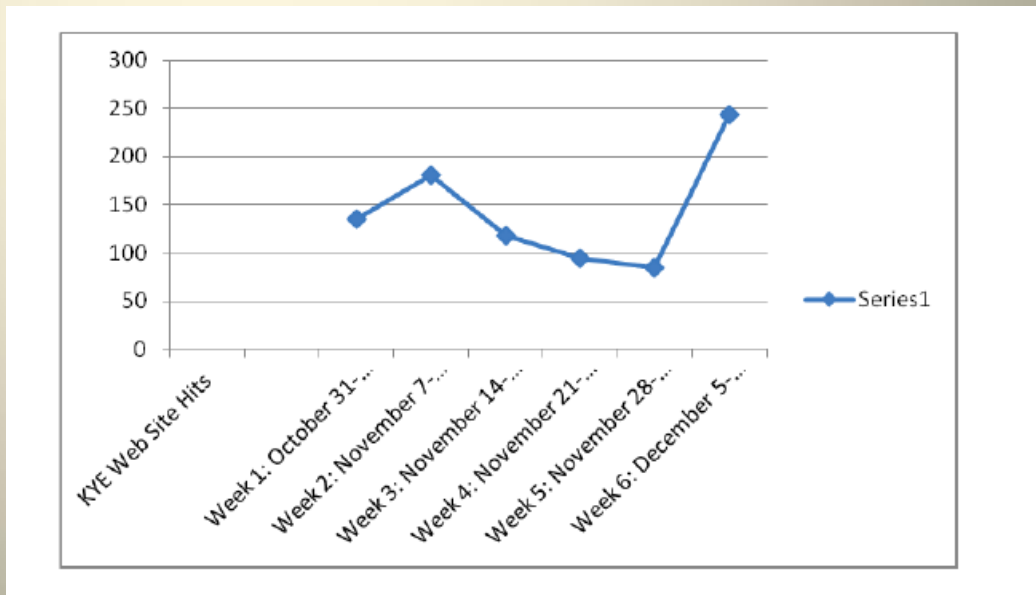
[Commercialization](#)

[Advertisements, billboard, Congress, PAO](#)



Know Your Earth Reported Statistics

- O'Hare Airport location: 17,774,883
- Public transportation locations: 5,513,492
- Malls: 2,288,431
- Downtown Chicago billboard: 1,030,800



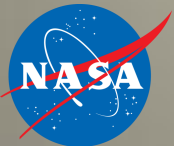
It's Not Marketing



It's not marketing ... it's education

- Country is in educational crisis
- We don't have enough engineers and scientists
- NASA Inspires
- NASA innovation drives global competitiveness and economic growth

Light must come out from under barrel ...



Herding Cats



So where does the EPO \$ Come from?

Science Mission Directorate Policy

Policy and Requirements for the Education and Public Outreach Programs of SMD Missions

SMD Policy Document SPD-18

Recommended by SMD Science Management Council, January 28, 2010

Approved by SMD Associate Administrator, Edward J. Weiler, January 28, 2010

Responsible SMD Official: SMD Lead for Education and Public Outreach

1. Overview

1.1 Principles

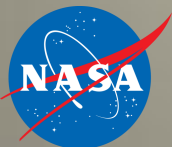
SMD requires that all missions have robust and substantial education and public outreach (E/PO) programs. These E/PO programs must be consistent with SMD's principles for mission E/PO:

- SMD missions must have an E/PO program that supports NASA's strategic goals and objectives for education and outreach, contributes to NASA's education portfolio, and is aligned with SMD's E/PO portfolio.

- SMD missions must have an E/PO program that is funded with at least 1% of the total prime mission cost excluding launch vehicle.
- SMD missions will designate an E/PO Lead who has the qualifications and experience necessary to successfully implement the mission's E/PO program.
 - SMD missions will partner with NASA and non-NASA organizations as appropriate in order to increase the quality and reach of the E/PO program.

1.2 Rationale for Mission E/PO Requirements

The SMD E/PO lead is required to report on the SMD E/PO portfolio and show that it aligns with the NASA Education portfolio. The Lead is responsible for reporting E/PO metrics for



1% for EPO

- Recommendation

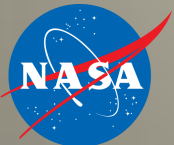
- SMD's allocation of 1% of budget for EPO activities (or an appropriate percentage) should be implemented across other directorates.
- Proposed expenditures from this allocated amount will be reviewed and approved by the PI/PM and the AA for Education and/or Communications.

- Reason

- All NASA directorates have an interest and obligation to support NASA's education mission. These activities are not currently adequately funded or coordinated with NASA HQ.

- Consequences of No Action

- NASA's diverse activities will continue to be presented to the public in different ways, at different levels of intensity, in ways that are not always in alignment with the agency's strategic goals.



EPO C of E

- Recommendation

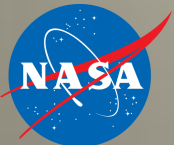
- NASA should identify and/or develop “centers of excellence” for EPO activities to whom project teams can reach out when developing their EPO programs. These should include (but not be limited to): social media, web site design, app development, data visualization, and video production.

- Reason

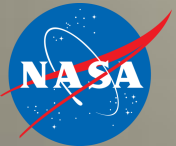
- Lower costs, reduce duplication of effort, share best practices, move towards consistency in communication style and usability.

- Consequences of No Action

- NASA will overspend as it continues to “reinvent the wheel” as each project / mission develops its own online, mobile and social presence. These various implementations may “speak with different voices” and not be aligned with NASA’s overall strategic goals.



Speak with One Voice



Websites ...

GRAVITY PROBE B

Testing Einstein's Universe

Search this site:

HOME STATUS MISSION TECHNOLOGY SPACETIME RESOURCES

2PG SUMMARY (PDF) VIDEO OVERVIEW CONCEPT ANIMATION EVERITT TALK (VIDEO) TESTING EINSTEIN'S UNIVERSE (VIDEO)

MISSION STATUS

Final results of the GP-B experiment were announced at NASA HQ in Washington DC on 4 May 2011.

The experimental results are in agreement with Einstein's theoretical predictions of the geodetic effect (0.28% margin of error) and the frame-dragging effect (19% margin of error). For details, see Mission Status Update page...

Francis Everitt awarded the Austrian Cross of Honor for Science & Art

QUICK LINKS

- FAQ (Revised Sep 2008)
- Press Information
- NASA Post-Flight Report (Mar 2007)
- NASA Science Report (Dec 2008)
- Slides from Presentations
- Technical Papers
- Image Gallery and Media Gallery
- KACST - Stanford Documents

COLLABORATORS

Lockheed Martin

CHANDRA

X-RAY OBSERVATORY

NASA's flagship mission for X-ray astronomy

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V1647 ORI:
X-raying the beating heart of a newborn star

Using combined data from a trio of orbiting X-ray telescopes, astronomers have obtained a rare glimpse of the powerful phenomena that accompany a still-forming star.
More (3 Jul 12)

1 2 3

Learn About

pernovas Black Holes Milky Way Chandra

Explore

Chandra For Kids: Space news especially for ages 6-12

Seconds

Launch Schedule
Mission Calendar

Related Sites

GRIL Mission Site
Discovery Program

Contact Us:
cxpub@cfa.harvard.edu

NASA Home > Missions > Gravity Probe B

Missions

Missions Highlights

Current Missions

Gravity Probe B The Relativity Mission

Past Missions

Future Missions

Launch Schedule

Mission Calendar

Worldbook at NASA

Relativity: Einstein's two theories are the "foundation blocks" of modern physics.

NASA Fact: GPB

The Gravity Probe B gyroscopes are the most perfect spheres ever made by humans. If these ping-pong-sized balls of fused quartz and silicon were the size of the Earth, the elevation of the entire surface would vary by no more than 12 feet.

Gravity Probe B

The Relativity Mission

Latest News

NASA's Gravity Probe B Confirms Two Einstein Space-Time Theories

NASA's Gravity Probe B (GP-B) mission has confirmed two key predictions derived from Albert Einstein's general theory of relativity, which the spacecraft was designed to test. The experiment, launched in 2004, used four ultra-precise gyroscopes to measure the hypothesized geodetic effect, the warping of space and time around a gravitational body, and frame-dragging, the amount a spinning object pulls space and time with it as it rotates. GP-B determined both effects with unprecedented precision by pointing at a single star, IM Pegasi, while in a polar orbit around Earth.

Gravity Probe B Videos

A 'Simple' Experiment

The Drag-Free Satellite

Superconductivity and the London Moment

Measuring Spacetime Curvature

Artist concept of Gravity Probe B spacecraft in orbit around the Earth. Image Credit: Stanford

PRECIPITATION MEASUREMENT MISSIONS

Home GPM TRMM Science Applications Multimedia Meetings Data Access Resources

Bird Migration to be Tracked by GPM Radar

NASA and The Nature Conservancy have joined forces to support the ability to measure precipitation on a global scale while also understanding migratory bird habitats on the Eastern Shore of Virginia. The organizations have signed a Space Act Agreement that will provide a location to support NASA's Precipitation Science programs, in particular the NASA-JAXA Global Precipitation Measurement mission. As a byproduct of this research,

TRMM

TROPICAL RAINFALL MEASURING MISSION

Launched by NASA and JAXA in 1997, TRMM carries the first on-orbit active/passive instrument package to study the intensity and structure of tropical rainfall.

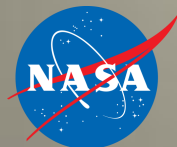
GPM

GLOBAL PRECIPITATION MEASUREMENT

An international satellite mission to be launched by NASA and JAXA in 2014 that will set new standards for precipitation measurements worldwide using a network of satellites united by the GPM Core Observatory.

FEATURED ARTICLES

1 2 3 4 5



Apps ...

Jet Propulsion Laboratory

iPhone Apps

Sort By: **Release Date** ▾



NASA Be A Martian
Education
Released Jul 12, 2012
FREE ▾



Spacecraft 3D
Education
Released Jul 11, 2012
FREE ▾



Comet Quest
Games
Updated Jul 03, 2012
FREE ▾



Earth-Now
Education
Updated Jun 29, 2012
FREE ▾



Satellite Insight
Games
Updated Jul 23, 2012
FREE ▾



Cassini
Education
Released Jul 20, 2011
FREE ▾



Aquarius
Education
Updated Jul 20, 2011
FREE ▾

iPad Apps



Spacecraft 3D
Education
Released Jul 11, 2012
FREE ▾

NASA Ames Research Center

iPhone Apps

Sort By: **Release Date** ▾



Sector 33
Games
Released Jan 30, 2012
DOWNLOAD ▾



NASA App
Education
Updated May 21, 2012
DOWNLOAD ▾

iPad Apps

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Sector 33

NASA App HD

NASA

iPhone Apps

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Space365
Education
Released Jul 25, 2012
FREE ▾



NASA HIAD
Education
Released Jul 07, 2012
FREE ▾



ISSLive
Education
Released Mar 02, 2012
FREE ▾



NASA Desert RATS Virtual Test
Education
Released Sep 12, 2011
FREE ▾



AstroApp: Space Station Crew
Education
Updated Oct 06, 2011
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NASA Television
News
Updated Jul 22, 2011
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AstroApp: Space Shuttle Crew
Education
Updated Jul 13, 2012
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NASA Space Weather
Weather
Updated Jun 10, 2011
FREE ▾



NASA Lunar Electric Rover Simulator
Games
Released Feb 22, 2010
FREE ▾

iPad Apps

1-9 of 13 [See All](#) ▸

Sort By: **Release Date** ▾



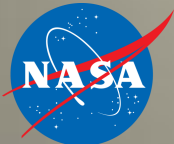
Space365
Education
Released Jul 25, 2012
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Space Place Prime
Education
Released Jul 24, 2012
FREE ▾



NASA Science: A Journey of Discovery
Education
Released Jul 12, 2012
FREE ▾



Frequently Asked Questions and Answers



- [Working with the CIMA Team](#)
- [Android FAQ](#)
- [Apple iOS \(iPhone, iPad and iPod Touch\) FAQ](#)
- [BlackBerry FAQ](#)
- [Login \(Launchpad/eAuth\) FAQ](#)

Working with the CIMA Team FAQ

[Return to Index](#)

What services does CIMA provide?

With our catalog of Mobile Application Services and Products you can extend your key enterprise information and business processes anywhere, any time through any mobile device. Our wide range of service offerings and products depicted in the 4 quadrants below enable customers to select services that most appropriately fit their organizational needs and requirements.

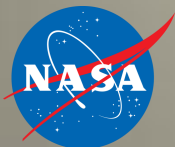
Mobile Consulting Services


Business Analytics & Requirements Definition
Mobile Application Design & Marketing
Mobile User Experience Design



Mobile Development Services

Conversion of an existing website or webapp to a native mobile app
Develop a mobile website or application






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32,874,154 video views


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Uploaded Videos

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Jet Propulsion Laboratory
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Missions
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Work at JPL
About JPL


NASAJPL Videos
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8,858,312 video views


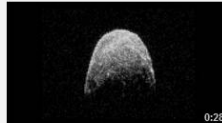

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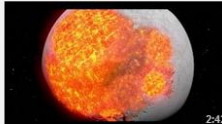
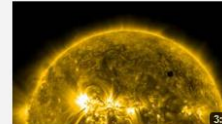


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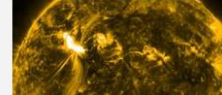
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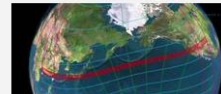


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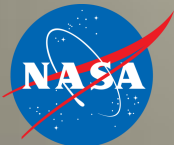




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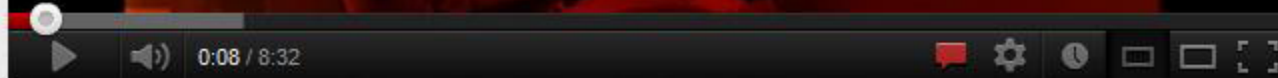
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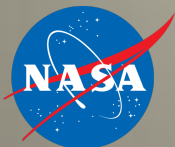


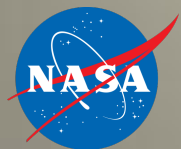
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One Message

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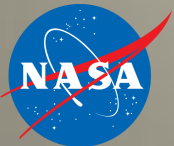
- NASA should develop one overarching message under which all NASA activities and programs (e.g. Aeronautics) can be integrated and presented to the public. All NASA websites, videos, apps, and social media should be consolidated and be organized thematically under this message and exposed via WWW.NASA.GOV.

- Reason

- The public is exposed to NASA activities through various channels and without a unifying conceptual framework , leading to confusion about NASA's identity and purpose. Some activities (ARMD) have little public awareness.

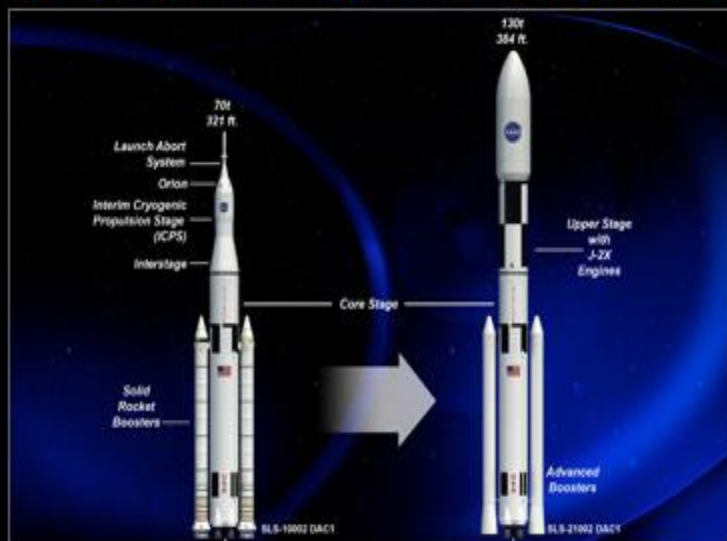
- Consequences of No Action

- Continuing public confusion about NASA's mission and direction, leading to eroding public support and marginalization of NASA's societal value.



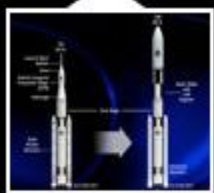
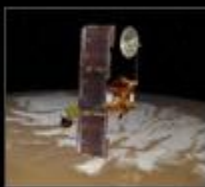
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Space Launch System Passes Major Agency Review



The rocket that will launch humans farther into space than ever before passed a major NASA review Wednesday.

The Space Launch System (SLS) Program completed a combined System Requirements Review and System Definition Review, which set requirements of the overall launch vehicle system. SLS now moves ahead to its preliminary design phase.

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...

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Other habitable planets.
The origin of our solar system.
The birth of the universe.

...

Mars
Venus
our nearest star-neighbors



VIDEOS



PHOTOS



JOB

Space Station
Sun
earth
planets
universe
manned missions
unmanned missions
Aeronautics



Fun fact: Kepler has discovered **2,321** planets! **Surprise Me!**

Sep. 12, 1962

“space is there, and we're going to climb it, and the moon and the planets are there, and new hopes for knowledge and peace are there.”

“an act of faith and vision, for we do not now know what benefits await us.”

(build on the first “A”: Aeronautics)

